VBD 11: DISTRIBUTION OF MAIN BLUETONGUE VIRUS VECTORS ON BELGIUM FARMS

ZIMMER, JEAN-YVES[1]; LOSSON, BERTRAND[2]; SAEGERMAN, CLAUDE[2]; HAUBRUGE, ERIC[1]

Gembloux Agro-Bio Tech (University of Liege)[1]; University of Liege[2]

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Bluetongue (BT) is a non-contagious vectorborne disease of domestic and wild ruminants. Since its emergence in northern Europe in August 2006, this viral epizooty has caused considerable economic losses to the sheep and cattle. In 2007 and 2008, BT virus (BTV) serotype 8 continued its spread across Europe. The biological vectors of BTV are biting midges of the genus Culicoides. This genus counts about 1.400 species, but only some of them are involved in the transmission of this virus.

During this study undertaken in 2007, populations of biting midges were monitored on a cattle (50°33' N, 4°41' E) and a sheep farm (50°26' N, 5°01' E) in the province of Namur (Belgium). UV light traps were placed both indoors (cowshed and sheepfold) and in nearby meadows. Results of trappings showed that Culicoides are most abundant close to livestock buildings than in surrounding meadows, according to the factors 16 (sheep farm) and 22 (cattle farm); meadows had however a greater species diversity and therefore a lower percentage of species known as vectors of BTV. The two species of the C. obsoletus/scoticus complex predominated for all trappings, particularly in the sheepfold and in the cowshed with 98% and 82% respectively. Females caught by light trappings were much more numerous than males; females represented indeed over 99% of individuals from the sheepfold and the cowshed. In the meadows, males however accounted for about 15% of Culicoides biting midges trapped. The statement of minimum and maximum temperatures, as well as observation of females' physiology completed this study. Percentage of nulliparous females is higher indoors (49% and 65% for sheepfold and cowshed respectively) than in nearby meadows (29% and 17% respectively). This observation could be explained by the presence of breeding sites inside livestock buildings, which would participate to the persistence of BTV from year to year despite fairly harshwinters.